COMSPHERE® 3800*Plus* SERIES MODEMS

MODELS 3810*Plus* and 3811*Plus*

QUICK REFERENCE

Document No. 3980-A2-GL10-10

PARADYNE™

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PARADYNE®

COMSPHERE 3800*Plus* Series Modems
Models 3810*Plus* and 3811*Plus*
Quick Reference

Document Number 3980-A2-GL10-10

February 2002

Product Documentation on the World Wide Web

Complete documentation for this product is available at **www.paradyne.com**.
Select *Library* → *Technical Manuals* → *Business Class Analog Modems*.

Select the following document:

3980-A2-GB30
COMSPHERE 3800Plus Series Modems User's Guide

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Before installing your modem, read the *Important Safety Instructions* on page 23.

Package Checklist

After opening the modem's package, check for damage and verify that the following items are present:

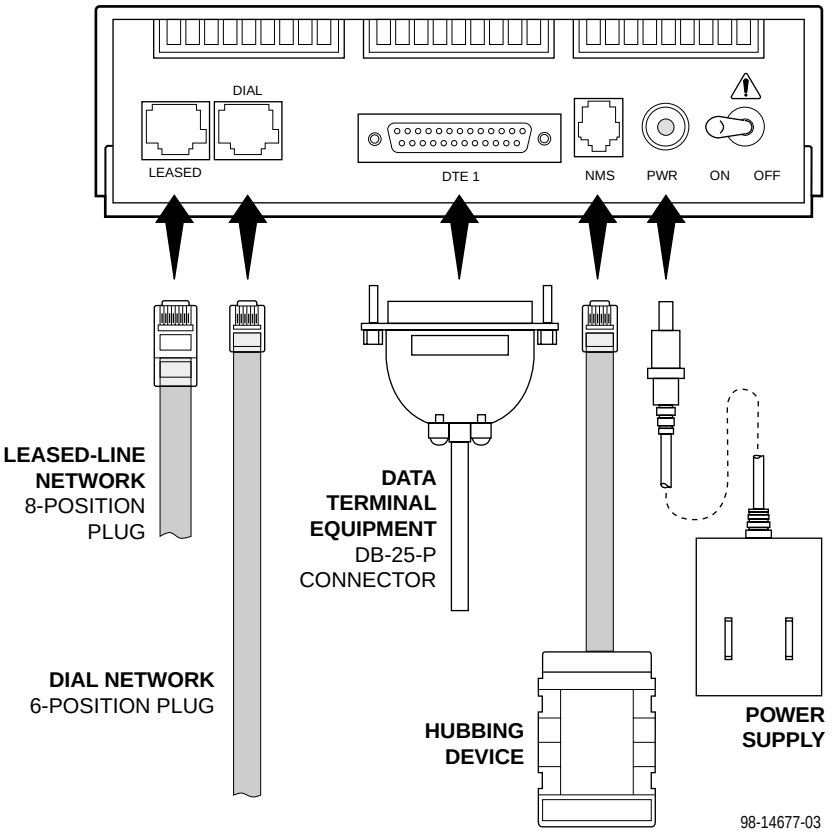
- 3810*Plus* modem
- Power supply
- One 6-position modular cord (in selected models)
- One 8-position modular cord (in selected models)

Model 3810*Plus* Installation

DTE Connection

Use the following procedure to connect the RS-232D cable from the modem to the DTE:

1. Make sure the modem's rear panel power switch is Off.
2. Connect the DB-25-P (male) connector on the cable to the DB-25-S (female) connector labeled DTE 1 on the modem's rear panel. Use a small screwdriver to fasten the cable to the modem.
3. Connect the DB-25-P connector on the cable to the DB-25-S connector on the DTE. Use a small screwdriver to fasten the cable to the DTE.



3810*Plus* Rear Panel

Dial-Line Connection

Use the following procedure to connect the 3810*Plus* modem to the dial network interface:

1. Insert the 6-position, 4-conductor modular plug into the jack labeled DIAL/LEASED.
2. Insert the other end of the modular cord into the dial network interface.

3810*Plus* 4-Wire/2-Wire Leased-Line Network Connection

Use the following procedure to connect a 3810*Plus* modem to the leased-line network interface:

1. Insert the 8-position, 8-conductor modular plug into the jack labeled LEASED (3810*Plus*).
2. Insert the other end of the modular cord into the leased-line network interface.
3. If you intend to use dial backup, follow steps listed in *Dial-Line Connection* section.

AC Power Supply Connection

WARNING:

Power supplies from other modems may fit into the POWER connector, but connecting the wrong power supply can cause damage to the modem or the power supply.

Use the following procedure to connect the modem to an ac power outlet:

1. Make sure the modem's power switch is in the Off position.
2. Insert the power transformer's cylindrical connector into the modem's rear panel power receptacle.
3. If the modem is provided with a tabletop power supply, connect the power cord to the power supply module.
4. Connect the power supply to a grounded ac power outlet.

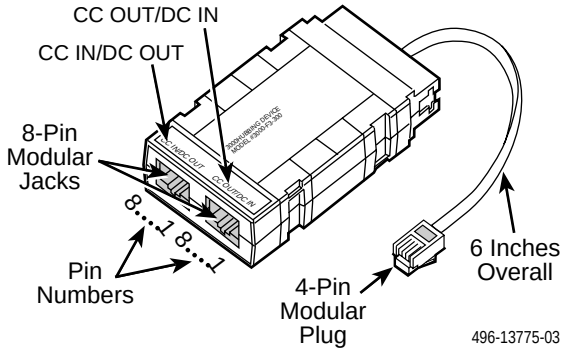
Network Management System Connection

For the 3810*Plus* modem, use the following procedure to connect the modem to the network management system interface:

1. Insert the subminiature 4-position, 4-conductor modular plug of the 3600 Hubbing Device into the jack labeled NMS.
2. Connect the 3600 Hubbing Device to the network management system.

Refer to the *3600 Hubbing Device, Feature Number 3600-F3-300, Installation Instructions* for more information. Installation for the 3810*Plus* modem is the same as for the 3610 DSU.

Hubbing Device



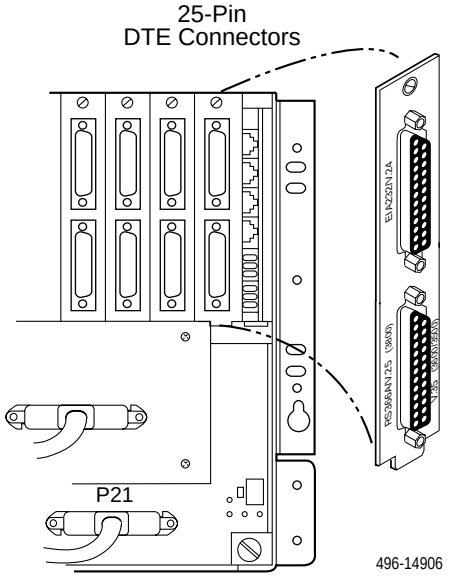
3600 Hubbing Device

Model 3811*Plus* Installation

The COMSPHERE 3000 Series Carrier has 17 slots which can hold up to 16 modems and one SDU. The SDU is required when the modems in the carrier are controlled by an NMS, or when multiple carriers in a cabinet configuration are to be controlled by a single SDCP. The SDCP of the COMSPHERE 3000 Series Carrier is the user interface to the 3811*Plus* modem. A single SDCP can control modems in up to eight carriers.

To install a 3811*Plus* modem into the carrier, perform the following steps.

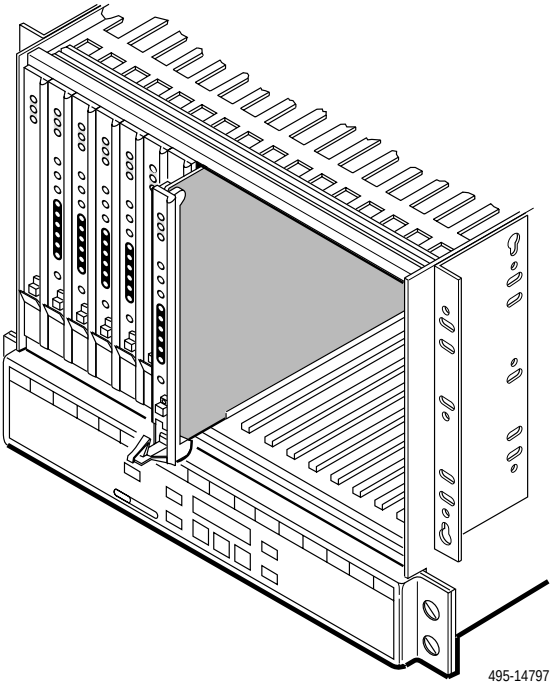
1. At the rear of the carrier, install the rear connector plate. Make sure the plate uses the same slot position as that intended for the modem.



   Loosely fasten the plate. This allows for slight adjustments later when installing the modem.

CAUTION:

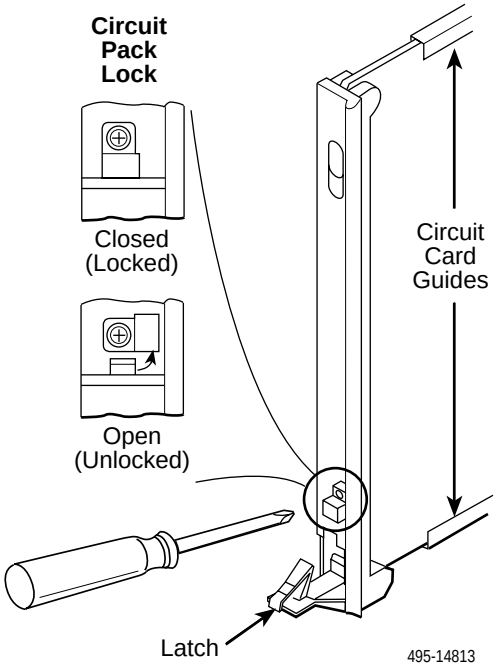
Always use a ground strap when handling a modem. Always store a 3811*Plus* modem in an antistatic bag when it is removed from the carrier.



2. At the front of the carrier, hold the modem vertically, with the latch on its faceplate in the open position, and insert it into the top and bottom card guides of one of the slots numbered 1–16.

Slide the modem into the slot, aligning the modem with the rear connector plate, until the backplane connector and DTE connector seat firmly into the back of the carrier. To lock the modem into the carrier, press the faceplate latch until a click is heard.

3. Rotate the circuit pack lock(s) into the closed position, and tighten the screw.



4. If the carrier is connected to power, the **Power** LED on the faceplate of the 3811*Plus* lights up. After several seconds the modem completes its power-up self-test in which all faceplate LEDs light up.

   If the modem fails, or an alarm condition exists, the **Alrm** LED on the faceplate lights up or flashes. It may be possible to run a diagnostic self-test from the SDCP. See *Test Branch* in the *COMSPHERE 3800Plus Modems User's Guide.*

   Return to the rear of the carrier and tighten the rear connector plate.

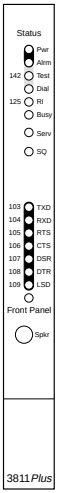
5. Connect an RS-232D DTE cable to the top connector of the rear connector plate. (The bottom connector is unused.)

6. Connect the other end of the cable to your DTE.

Diagnostic Control Panel

The Diagnostic Control Panel (DCP) is the user interface to the modem. It provides a 2-line, 32-character liquid crystal display (LCD), a keypad, speaker grill, and status indicators.

A Shared DCP (SDCP) is used to manage carrier-mounted 3811*Plus* modems. The Select key is used to connect the SDCP to a modem or other device in a specific carrier and slot location. Press the Select key, then enter the modem carrier (1–8) and slot (1–16) numbers. Once the modem is selected, operation of the SDCP is the same as for the standalone DCP.

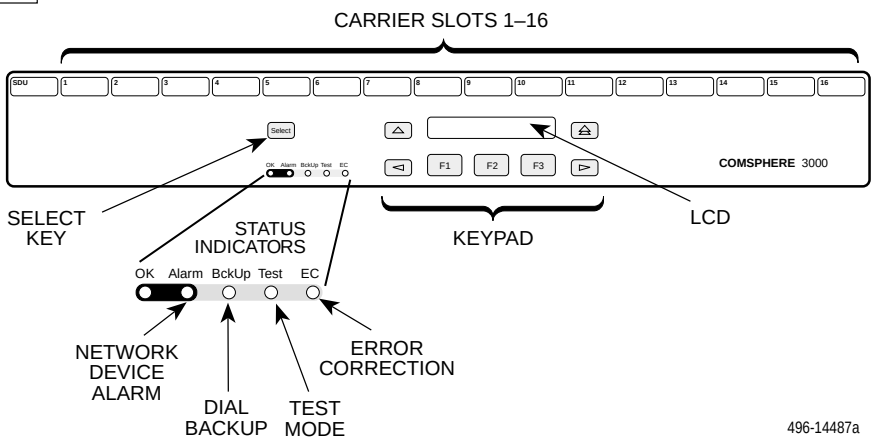


Direction and Function keys provide operator control.

△	Moves up one level from the current display.
◁ and ▷	Moves cursor or display to the left or right.
⧋	Returns display to Top-Level menu.
F1, F2, F3	Selects item displayed directly above the key.

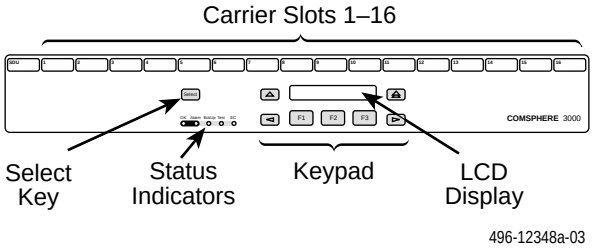
Hidden Choice Indicators.

< >	Indicates more LCD selections are available to the left or right of what is currently displayed on the LCD.
Nxt	Indicates more configuration options are available below what is currently displayed. Also indicates selected configuration option.
End	Indicates last configuration option available for that group.



Checking the SDCP

If an SDCP is installed, verify that the SDCP can be used to control the 3811*Plus* modem. Perform the following steps.



1. Press the Select key on the SDCP. The cursor appears in the 2-digit slot selection entry.
2. Press the ◁ key to position the cursor on the 2-digit carrier selection entry.
3. Press the F1 (↑) or F2 (↓) key until the carrier number you want appears on the LCD.

   The carrier number selection has a range of 1 to 8. With an SDU installed, a single SDCP can control up to eight carriers.
4. Press the ▷ key to position the cursor on the slot selection entry.
5. Press the F1 (↑) or F2 (↓) key until the slot number (1–16) you want appears on the LCD. (Ignore the AB designator that appears on the LCD since it is not applicable to the 3811*Plus* modem.)

   The Front Panel LED on the modem's faceplate lights up.
6. Press the Select key to place the SDCP in direct communication with the selected modem.

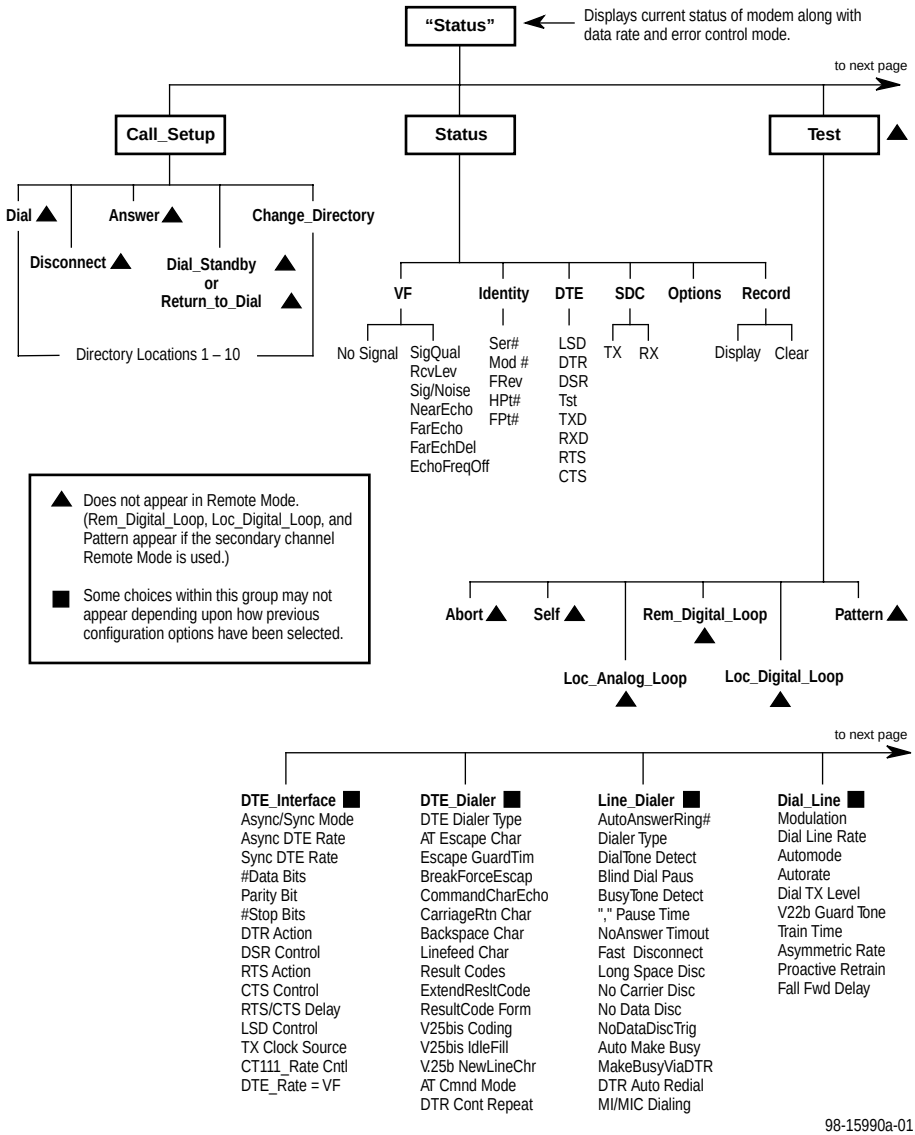
   The LCD displays the Top-Level menu for the selected modem.

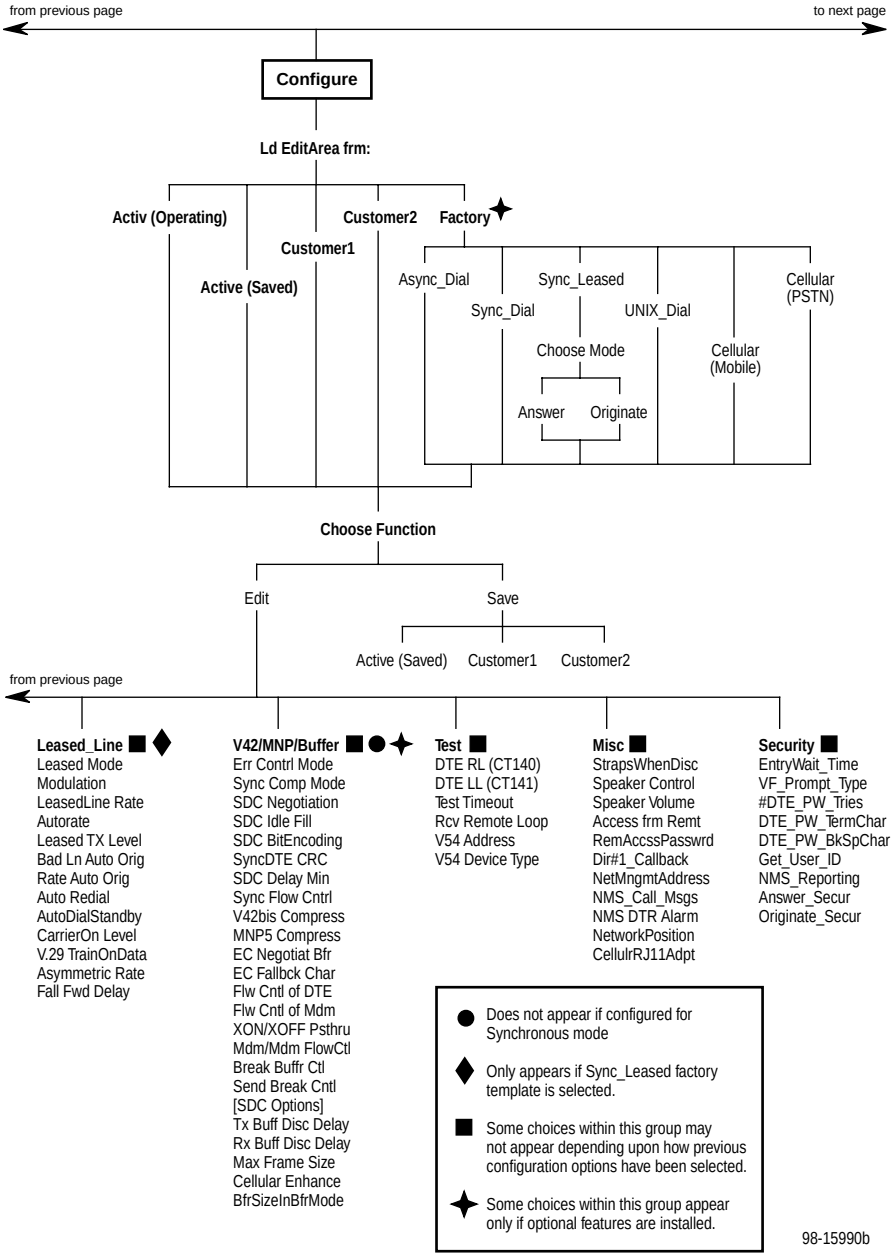
Administrative Password

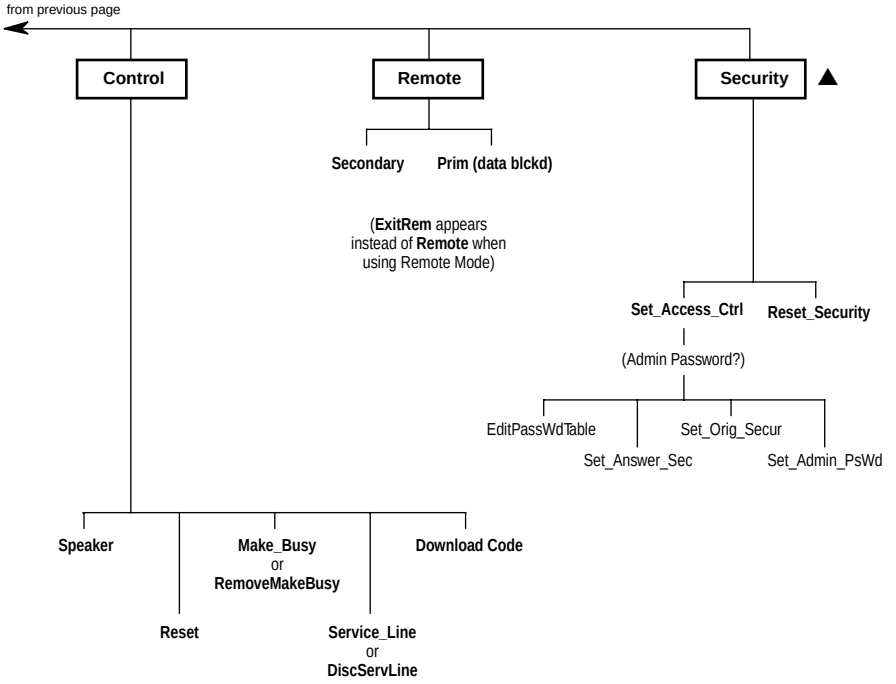
The Administrative Password is an 8-digit decimal number password that allows only authorized users to access Security branch functions. The Administration Password must be entered every time the Security branch is accessed. The factory default Administration Passsword is 00000000.

The Reset_Security function of the Security branch resets the Administrative Password to the value above the bar code on the last page of this reference.

3800*Plus* Modems Menu Tree




from previous page
to next page
Configure
Ld EditArea frm:
Activ (Operating)
Active (Saved)
Customer1
Customer2
Factory
Async_Dial
Sync_Dial
Sync_Leased
UNIX_Dial
Choose Mode
Answer
Originate
Cellular (PSTN)
Cellular (Mobile)
Choose Function
Edit
Save
Active (Saved)
Customer1
Customer2
from previous page
Leased_Line
Leased Mode
Modulation
LeasedLine Rate
Autorate
Leased TX Level
Bad Ln Auto Orig
Rate Auto Orig
Auto Redial
AutoDialStandby
CarrierOn Level
V.29 TrainOnData
Asymmetric Rate
Fall Fwd Delay
V42/MNP/Buffer
Err Contrl Mode
Sync Comp Mode
SDC Negotiation
SDC Idle Fill
SDC BitEncoding
SyncDTE CRC
SDC Delay Min
Sync Flow Cntrl
V42bis Compress
MNP5 Compress
EC Negotiat Bfr
EC Fallbck Char
Flw Cntl of DTE
Flw Cntl of Mdm
XON/XOFF Psthru
Mdm/Mdm FlowCtl
Break Buffr Ctl
Send Break Cntl
[SDC Options]
Tx Buff Disc Delay
Rx Buff Disc Delay
Max Frame Size
Cellular Enhance
BfrSizeInBfrMode
Test
DTE RL (CT140)
DTE LL (CT141)
Test Timeout
Rcv Remote Loop
V54 Address
V54 Device Type
Misc
StrapsWhenDisc
Speaker Control
Speaker Volume
Access frm Remt
RemAccssPasswrd
Dir#1_Callback
NetMngmtAddress
NMS_Call_Msgs
NMS DTR Alarm
NetworkPosition
CellulrRJ11Adpt
Security
EntryWait_Time
VF_Prompt_Type
#DTE_PW_Tries
DTE_PW_TermChar
DTE_PW_BkSpChar
Get_User_ID
NMS_Reporting
Answer_Secur
Originate_Secur
Does not appear if configured for Synchronous mode
Only appears if Sync_Leased factory template is selected.
Some choices within this group may not appear depending upon how previous configuration options have been selected.
Some choices within this group appear only if optional features are installed.
98-15990b



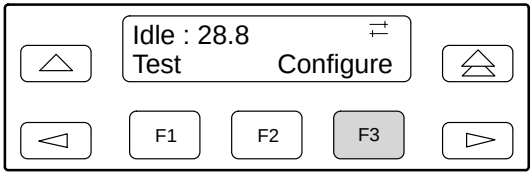
▲ Does not appear in Remote Mode.

98-15990c-01

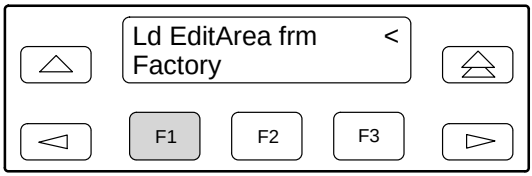
Configuration Option Procedures — DCP Commands

1. Move to the Configure branch and select a configuration area to load from: Active (Operating), Active (Saved), Customer 1, Customer 2, or Factory (Async Dial, Sync Dial, Sync Leased, or UNIX Dial). If Enhanced Throughput Cellular (ETC) is installed, Factory areas Cellular (Mobile) and Cellular (PSTN) are also available.

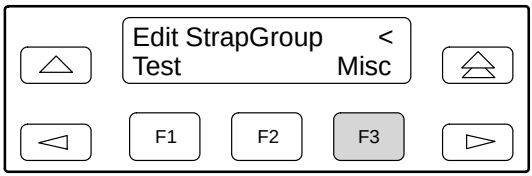
Select Configure from the Top-Level menu.



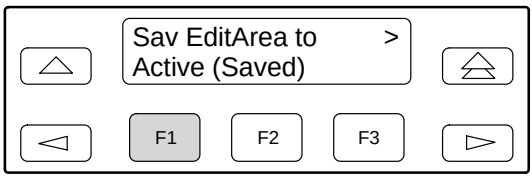
Scroll to the area you wish to load.



2. Select Edit to choose the set of configuration options to be edited: DTE Interface, DTE Dialer, Line Dialer, Dial Line, Leased Line, V.42/MNP/Buffer, Tests, Misc, or Security.



3. When the new configuration is completed, Save the edited configuration options to the desired configuration area: Active (Saved), Customer 1, Customer 2.



Configuration Option Procedures — AT Commands

Loading Factory Configurations

Use the AT&F***y***&W***n*** command to load a factory configuration to either the Active (Saved), Customer 1, or Customer 2 configuration area.

Type: AT&F***y***&W***n***

where: ***y*** is one of the following factory configurations:
0 = Async Dial
1 = Sync Dial
2 = Sync Leased (Answer)
3 = UNIX Dial
4 = Sync Leased (Originate)
5 = Cellular (Mobile) (if ETC installed)
6 = Cellular (PSTN) (if ETC installed)

where: ***n*** is one of the following configuration areas:
0 = Active (Saved)
1 = Customer 1
2 = Customer 2

Loading Configuration Areas to Active (Operating)

Use the ATZ***n*** command to load stored configurations from Active (Saved), Customer 1, or Customer 2 configuration areas to Active (Operating).

Type: ATZ***n***

where: ***n*** is one of the following:
0 = Active (Saved)
1 = Customer 1
2 = Customer 2
3 = Active (Saved) + Reset

AT COMMANDS

Bold text indicates Async Dial factory defaults.

AT — Attention Command Prefix/Autobaud Rate. Indicates a command string has started and determines the DTE's data rate and parity.

A/ — Repeat Last Command. Reexecutes last command string. (Not to be preceded with AT or followed by pressing the Return key.)

A — Answer Mode. Goes off-hook and attempts to establish a connection without waiting for a ring.

B0 — ITU-T V.21 or V.22 (300 or 1200 bps)
B1 — Bell 103 or 212A (300 or 1200 bps)

D*n* — Dial. Dials the telephone number *n* with optional modifiers:

T	Tone Dial (DTMF)
P	Pulse Dial
,	Pause
W	Wait for Dial Tone
R	Reverse Dial
@	Quiet Answer
!	Hook Flash
;	Return to Command Mode

DS=*n* — Dial Stored Number. Dials the number stored in location *n* (1–10).

En — *Command Character Echo*
E0 — Disables echo to the DTE.
E1 — **Enables echo to the DTE.**

H0 — Modem goes on-hook.
H1 — Modem goes off-hook.

I0 — Displays product code–144.
I1 — Displays 3-digit firmware revision number.
I2 — Performs an EPROM check.
I3 — Displays modem's serial number.
I4 — Displays modem's model number.
I5 — Displays part number of circuit card.
I6 — Displays firmware release number.
I9 — (same as I1)
I10=*n* — Changes value of product code (0=144, 1=240, 2=480, 3=960, 4=120).
I11 — Firmware checksum.
I19 — Displays entire firmware revision number.

Ln — *Speaker Volume*
L0,L1 — Selects low volume.
L2 — **Selects medium volume.**
L3 — Selects high volume.

AT COMMANDS *(continued)*

Mn — *Speaker ON/Off Control*
M0 — Speaker always Off.
M1 — **Speaker ON until carrier signal becomes active.**
M2 — Speaker always ON.

O — Returns modem to Data mode from online Command mode.

P — Enables Pulse Dial mode.

Qn — *Result Codes*
Q0 — **Enables result codes. Refer to *Result Codes* section.**
Q1 — Disables result codes.
Q2 — Enables originate modem to send result codes to the DTE. Required for most UNIX applications.

S*n*? — Displays value of S-Register (where *n* is the register number).
S*n*=*r* — Change S-Register. Changes the contents of the S-Register (where *n* is the register number and *r* is the assigned value).

T — Enables Tone Dial mode.

Vn — *Result Code Format*
V0 — Displays as digits (Numbers 1).
V1 — **Displays as text.**
V2 — Displays as digits (Numbers 2).

Xn — *Extended Result Codes; Dial Tone Detect; Busy Tone Detect*
X0 — Disables extended result codes 5–16, dial tone detect, and busy tone.
X1 — Enables extended result codes 5–16, disables dial tone detect and busy tone detect. Refer to *Result Codes* section.
X2 — Enables extended result codes 5–16, dial tone detect, and disables busy tone detect.
X3 — Enables extended result codes 5–16, disables dial tone detect and enables busy tone detect. Refer to *Result Codes* section.
X4 — **Enables extended result codes 5–16, dial tone detect, and busy tone detect. Refer to *Result Codes* section.**
X5 — Adds EC suffix to extended result codes (20–27) if error control is used, enables dial tone detect and busy tone detect.
X6 — Adds either V.42 or MNP suffix to extended result codes (20–27) if data compression is used, enables dial tone detect, and busy tone detect.
X7 — DTE rate appears in CONNECT message instead of line rate, enables dial tone detect and busy tone detect. Refer to *Result Codes* section.

AT COMMANDS *(continued)*

Yn *Long Space Disconnect*
Y0 Disable.
Y1 Enable.

Zn *Reset and Load Active*
Z0 Loads contents of Active (Saved) into Active (Operating).
Z1 Loads contents of Customer 1 into Active (Operating).
Z2 Loads contents of Customer 2 into Active (Operating).
Z3 Loads contents of Active (Saved) into Active (Operating) and performs a reset.
Z9 Performs a full modem reset.

+FCLASS=n Fax class
+FCLASS=0 Data
+FCLASS=1 Fax Class 1 (EIA 578)
+FCLASS=2 Fax Class 2 (EIA/TIA SP-2388)

&Cn *LSD Control*
&C0 Forced On. Forces LSD ON at all times.
&C1 Standard RS232. LSD is ON when the remote modem's carrier signal is detected. LSD is Off when carrier signal is not detected.
&C2 Wink When Disc. LSD, normally forced ON, turns Off for approximately 1 to 2 seconds upon disconnect.
&C3 Follows DTR. State of LSD follows state of DTR.
&C4 Simulated Control Carrier. State of LSD follows state of remote modem's RTS.
&C5 =DTR/DiscOff. State of LSD follows state of DTR except upon a disconnect where DTR remains ON and LSD turns Off. DTR must then toggle Off and ON to turn LSD ON. Required for AT&T DATAKIT® dial-out applications.
&C6 Bridge Retrain. LSD behaves as in Standard RS232, except that it is turned Off when retrain lasts longer than 10 seconds, and ON when no retrain is detected for 10 seconds.

&Dn *DTR Action*
&D0 Ignore. Modem ignores the DTR (Data Terminal Ready) signal and treats it as always ON.
&D1 Off=Command Mode. Modem enters online Command mode when DTR is lowered.
&D2 Standard RS232. DTR signal is controlled by the DTE.
&D3 Off=Reload Straps. Modem loads Active (Operating) area with Active (Saved) area when DTR is lowered.
&D4 Controls On-Hook. Modem does not disconnect until DTR lowered by DTE.

AT COMMANDS *(continued)*

&Fn *Loads Factory Configuration*
&F0 Loads Async Dial factory configuration options into Active (Operating) configuration area.
&F1 Loads Sync Dial factory configuration options into Active (Operating) configuration area.
&F2 Loads Sync Leased (Answer Mode) factory configuration options into Active (Operating) configuration area.
&F3 Loads UNIX Dial factory configuration options into Active (Operating) configuration area.
&F4 Loads Sync Leased (Originate Mode) factory configuration options into Active (Operating) configuration area.
&F5 Cellular (Mobile) (if ETC installed).
&F6 Cellular (PSTN) (if ETC installed).

&Gn *V.22bis Guard Tone*
&G0 Disables guard tone.
&G1 Sets guard tone to 550 Hz.
&G2 Sets guard tone to 1800 Hz.

&In *Dial Transmit Level*
&I10 –10 dBm.
&I11 –11 dBm.
• •
• •
&I32 –32 dBm.
&I99 ETC 1.0 (if ETC installed).
&I100 ETC 1.1 (if ETC installed).

&Jn *Dial Transmit Level Type*
&J0 Modem sets dial transmit level to Permissive mode at –9 dBm.

&Ln *Leased-Line Mode*
&L0 Disables leased-line operation.
&L1 2-wire originate leased-line operation.
&L2 4-wire originate leased-line operation.
&L3 2-wire answer leased-line operation.
&L4 4-wire answer leased-line operation.

&Mn,&Qn *Async/Sync Mode and DTE Dialer Type*
&M0,&Q0 Modem operates in Async mode and uses AT command protocol.
&M1,&Q1 Modem operates in Sync mode and uses AT command protocol.
&M2,&Q2 Modem operates in Sync mode and dials the number stored in directory location 1 when DTR signal turns Off and then ON.
&M3,&Q3 Modem operates in Sync mode and uses AT command protocol.
&Q4 Modem operates in Async mode and uses AT Command protocol; Hayes® AutoSync is enabled.
&M6,&Q6 Modem operates in Sync mode and dials the number stored in directory location 1 when DTR signal turns Off and then ON and leased line is down.
&M231, &Q231 Modem operates in Async mode; the DTE Dialer Type is disabled.

AT COMMANDS *(continued)*

&M232, &Q232 Modem operates in Async mode; V.25bis Async dialing is enabled.
&M233, &Q233 Modem operates in Sync mode; V.25 Bisync dialing is enabled.
&M234, &Q234 Modem operates in Sync mode; V.25bis HDLC dialing is enabled.
&M235, &Q235 Modem operates in Async mode; AT&T Exclusive dialing is enabled.
&M236, &Q236 Modem operates in Sync mode; the DTE Dialer Type is disabled.

&Rn	*RTS Action*
&R0	Standard RS232. RTS action is controlled by DTE.
&R1	**Ignores RTS. Modem ignores RTS signal and treats it as always ON.**
&R2	Simulated Control Carrier. State of RTS follows state of LSD.
&R3	Control Carrier. DTE's RTS signal controls modem's carrier signal.

&Sn	*DSR Control*
&S0	**Forced On. Forces DSR signal ON.**
&S1	Standard RS232. Modem controls DSR signal.
&S2	Wink When Disc. DSR signal turns Off for approximately 1 to 2 seconds upon disconnecting.
&S3	Follows DTR. Modem sends DSR to DTE when it receives DTR from DTE.
&S4	On Early. DSR is Off when modem is in idle state. DSR goes ON when modem enters Data mode.
&S5	Delay to Data. DSR does not turn ON until the modem enters Data mode.
&S6	Dial Backup toggle.

&Tn	*Tests*
&T0	Stops any test in progress.
&T1	Starts a Local Analog Loopback test (V.54, L3).
&T2	Transmits and receives a 511 BERT pattern.
&T3	Starts a Local Digital Loopback test.
&T4	Accepts request from remote modem for a Remote Digital Loopback test.
&T5	Denies request from remote modem for a Remote Digital Loopback test.
&T6	Starts a Remote Digital Loopback test (V.54, type L2).
&T7	Starts a Remote Digital Loopback test with a Pattern (V.54, type L2).
&T8	Starts a Local Analog Loopback test with a Pattern (V.54, type L3).
&T9	Starts a self-test.

AT COMMANDS *(continued)*

&Vn	*View Configuration Options*
&V0	Displays Active (Operating) configuration options.
&V1	Displays Active (Saved) configuration options.
&V2	Displays Customer 1 configuration options.
&V3	Displays Customer 2 configuration options.
&V4	Displays telephone numbers stored in directory locations 1–10.

&Wn	*Write (Save to Memory)*
&W0	Saves current configuration options in Active (Operating) to Active (Saved).
&W1	Saves current configuration options in Active (Operating) to Customer 1.
&W2	Saves current configuration options in Active (Operating) to Customer 2.

&Xn	*Transmit Clock Source*
&X0	**Modem provides internal clock source for synchronous data (Pin 15).**
&X1	Modem uses external source (Pin 24) for clock for synchronous data.
&X2	Modem uses received signal as clock source for synchronous data.

&Z*n*=*x*	Modem stores telephone number *x* (and any dial modifiers) in directory location *n* (1–10). For example, the command AT&Z1=555-1234 stores the number 5551234 in directory location 1. To clear a telephone number from a memory location, issue &Z*n*=*x* without entering a telephone number.

\An	*Maximum Frame Size*
\A0	64
\A1	128
\A2	192
\A3	256
\A4	32
\A5	16

\Cn	*Error Control Negotiate Buffer*
\C0	**Data is not buffered during handshaking sequence.**
\C1	Data is buffered up to 4 seconds during handshaking sequence.
\C2	**Data is not buffered during handshaking sequence; however, the modem switches to Buffer mode when it receives an error control fallback character.**

AT COMMANDS *(continued)*

\D*n* *CTS Control*
\D0 Forced On. CTS is forced ON.
\D1 Standard RS232 operation.
\D2 Wink When Disc. CTS turns Off for approximately 1 to 2 seconds upon disconnecting.
\D3 Follows DTR. The state of CTS follows the state of DTR.

\G*n* *Modem-to-Modem Flow Control*
\G0 Disables modem-to-modem flow control.
\G1 Enables modem-to-modem flow control.

\K*n* *Break Buffer Control, Send Break Control, Break Forces Escape*
\K0 Discards data, sends break before data, and enables break forces escape.
\K1 Discards data, sends break before data, and disables break forces escape.
\K2 Keeps data, sends break before data, and enables break forces escape.
\K3 Keeps data, sends break before data, and disables break forces escape.
\K4 Keeps data, sends data before break, and enables break forces escape.
\K5 Keeps data, sends data before break, and disables break forces escape.
\K6 Discards break, disables break forces escape.

\N*n* *Error Control Mode*
\N0 Buffer Mode. Modem does not use error control; DTE rate can differ from VF rate.
\N1 Direct Mode. Modem does not use error control; DTE rate and VF rate must be the same.
\N2 MNP or Disc. Modem disconnects if it does not connect in MNP mode.
\N3 MNP or Buffer. Modem connects in Buffer mode if it does not connect in MNP mode.
\N4 V.42/MNP or Disc. Modem disconnects if it does not connect in V.42 or MNP mode.
\N5 V.42/MNP or Buffer. Modem connects in Buffer mode if it does not connect in V.42 or MNP mode.
\N6 LAPM or disconnect.
\N7 LAPM or buffer.

\Q*n* *Flow Control of DTE*
\Q0, \Q5, \Q6
Disables flow control of DTE.
\Q1, \Q4 Enables XON/XOFF flow control.
\Q2, \Q3 Modem raises and lowers CTS to start and stop flow control.

\Q*n* *Flow Control of Modem*
\Q0, **Q2**, \Q4
Disables flow control of modem.
\Q1, \Q5 Enables XON/XOFF flow control.
\Q3, \Q6 Modem starts and stops flow control based upon state of DTE's RTS signal.

AT COMMANDS *(continued)*

\T*n* *No Data Disconnect Timer*
\T0 Disables no data disconnect timer.
\Tn Sets no data disconnect timer to a value from 1 minute to 255 minutes.

\X*n* *XON/XOFF Passthrough*
\X0 Disables transmission of flow control characters to remote modem.
\X1 Enables transmission of flow control characters to remote modem.

%A*n* Sets error control fallback character *n* to an ASCII value from 0 to 127.

%B*n* Sets modulation to V.34 and VF rate to *n* (300, 1200, or 2400 to 33600 in increments of 2400). Default is **%B33600**.
%BL*n* Sets modulation to V.32bis and VF rate to *n* (2400 to 19200 in increments of 2400)

%C*n* *MNP 5 Data Compression*
%C0 Disables MNP5 data compression.
%C1 Enables MNP5 data compression.

%R*n* Sets DTE rate for Asynchronous mode to *n* (300, 1200, 2400, 4800, 7200, 9600, 12000, 14400, **19200**, 28800, 38400, 57600, 76800, or 115200).

#DM*n* *SDC Delay Minimization*
#DM0 Only whole frames transmitted to DTE.
#DM1 Partial frames transmitted to DTE as received.

#Q*n* *Sync Flow Ctrl*
#Q0 No flow control.
#Q1 Flow control using TX clock.
#Q2 Flow control using CTS.

#SC*n* *Sync Comp Mode*
#SC0 Disable SDC.
#SC1 Enable SDC.

″H*n* *V.42 bis Data Compression*
″H0 Disables V.42 bis data compression.
″H1 Enables V.42 bis data compression for transmit only.
″H2 Enables V.42 bis data compression for receive only.
″**H3 Enables V.42 bis data compression in both the transmit and receive directions.**

″L*n* *Disconnect at 300 bps*
″L0 Disable
″L1 Enable

RESULT CODES

Numbers(1)	Numbers(2)	Words
0	0	OK
1	1	CONNECT
2	2	RING
3	3	NO CARRIER
4	4	ERROR

Result Codes 5–14, 16, 19 are enabled with the X1, X2, X3, and X4 commands.

5	5	CONNECT 1200
6	6	NO DIALTONE
7	7	BUSY
8	8	NO ANSWER
10	10	CONNECT 2400
11	11	CONNECT 4800
12	12	CONNECT 9600
13	16	CONNECT 12000
14	13	CONNECT 14400
15	14	CONNECT 19200
16	15	CONNECT 7200
17	17	CONNECT 16800
19	1	CONNECT 300

Result Codes 20–27, 29, and 37–48 are enabled with the X5 command (EC suffix) or the X6 command (V.42 or MNP suffix).

20	10	CONNECT 2400/EC
21	11	CONNECT 4800/EC
22	12	CONNECT 9600/EC
23	16	CONNECT 12000/EC
24	13	CONNECT 14400/EC
25	17	CONNECT 16800/EC
26	15	CONNECT 7200/EC
27	5	CONNECT 1200/EC
29	14	CONNECT 19200/EC
37	37	CONNECT 21600
38	38	CONNECT 24000
39	39	CONNECT 26400
40	40	CONNECT 28800
41	41	CONNECT 31200
42	42	CONNECT 33600
43	43	CONNECT 21600/EC
44	44	CONNECT 24000/EC
45	45	CONNECT 26400/EC
46	46	CONNECT 28800/EC
47	47	CONNECT 31200/EC
48	48	CONNECT 33600/EC

Result Codes 15, 28–34 are enabled with the X7 command (DTE rate suffix).

28	28	CONNECT 38400
30	30	CONNECT 57600
32	32	CONNECT 76800
34	34	CONNECT 115200

DIAL COMMAND MODIFIERS

T	Tone Dial (DTMF)
P	Pulse Dial
,	Pause
W	Wait for Dial Tone
R	Reverse Dial
@	Quiet Answer
!	Hook Flash
;	Return to Command Mode

S-REGISTERS

Register	Description	Factory Setting	Range
S0	Auto-Answer Ring Number	1	0(Disable) or 1–255 rings
S2	AT Escape Character	43(+)	0–127 ASCII
S3	Carriage Return Character	13	0–127 ASCII
S4	Line Feed Character	10	0–127 ASCII
S5	Backspace Character	8	0–127 ASCII
S6	Blind Dial Pause	2	2–255 seconds
S7	No Answer Time-out	45	1–255 seconds
S8	"," Pause Time for the Dial Modifier	2	0–255 seconds
S10	No Carrier Disconnect	2	0–254 (10ths of a second) or 255(Disable)
S12	Escape Sequence Guard Time	50	0–255 in 20-millisecond increments
S14	Asymmetric Rate (Dial)	0	0=Enable; 1=Disable
S15	Asymmetric Rate (Leased)	0	0=Enable; 1=Disable
S18	Test Time-out	0(disabled)	0–255 seconds
S23	Proactive Retrain	0	0=Enable; 1=Disable
S25	AutoSync Start Pause	0(disabled)	0–30 seconds
S26	RTS/CTS Delay	0	0–255 seconds
S28	SDC Negotiation	0	0=LAPM_Buffer; 1=LAPM_Discon
S29	SDC Idle Fill	0	0=Flag_Fill; 1=Mark_Fill
S30	Sync DTE Rate	0	0=12800 bps; 1=115200; 3=96000; 4=78800; 5=72000; 6=64000; 7=57600; 8=56000; 9=48000; 10=38400; 11=28800; 12=19200; 13=14400; 14=9600; 15=4800; 16=2400; 17=1200
S31	SDC Bit Encoding	0	0=NRZ; 1=NRZI
S32	Sync DTE CRC	0	0=Ignore; 1=CRC16
S33	Buffer Size In Buffer Mode	0	0=Normal; 1=Minimized
S35	Auto Redial	0	0=Dir1; 1=Dirs1–2; 2=Dirs1–3... 9=Dirs1–10
S36	Rate Auto Originate	0	0(Disable) or 1(4800) – 6(16,800)
S37	Auto Redial	0	0(Dir 1) – 9(Dirs 1–10)
S38	DTR Cont Repeat	0	0=Disable, 1=Enable
S39	RX Buffer Disconnect Delay	0	0(Disable) or 1–255 seconds
S40	Auto Make Busy	0	0=Disable, 1=Enable
S41	Dial Line Rate	29	1=14400(V.32bis); 2=12000(V.32bis); 3=9600(V.32bis); 4=7200(V.32bis); 5=4800(V.32bis); 6=2400(V.22bis); 7=1200(V.22); 8=1200(212A); 10=0–300(V.21); 11=0–300(103J); 20=19200(V.32terbo); 21=16800(V.32terbo); 27=33600(V.34); 28=31200(V.34); 29=28800(V.34); 30=26400(V.34); 31=24000(V.34); 32=21600(V.34); 33=19200(V.34); 34=16800(V.34); 35=14400(V.34); 36=12000(V.34); 37=9600(V.34); 38=7200(V.34); 39=4800(V.34); 40=2400(V.34)

S-REGISTERS *(continued)*

Register	Description	Factory Setting	Range
S43	Train Time	0	0=Long; 1=Short
S44	Leased-Line Rate	27	1=14400(V.32bis); 2=12000(V.32bis); 3=9600(V.32bis); 4=7200(V.32bis); 5=4800(V.32bis); 6=2400(V22bis); 18=19200(V.32terbo); 19=16800(V.32terbo); 25=33600(V.34); 26=31200(V.34); 27=28800(V.34); 28=26400(V.34); 29=24000(V.34); 30=21600(V.34); 31=19200(V.34); 32=16800(V.34); 33=14400(V.34); 34=12000(V.34); 35=9600(V.34); 36=7200(V.34); 37=4800(V.34); 38=2400(V.34)
S45	Leased TX Level	0	0dBm–15dBm
S46	Auto Dial Backup	0	0=Disable; 1=Enable
S47	Auto Dial Standby	0	0=Disable; 1=15 minutes; 2=1 hour; 3=4 hours; 255=Test(2min)
S48	Leased-Line Carrier On Level	0	0=–43dBm; 1=–26dBm
S49	Buffer Disconnect Delay	10	0=Disable or 1–255 in 1-second increments
S51	DTE RL (CT140)	0	0=Disable; 1=Enable
S52	DTE LL (CT141)	0	0=Disable; 1=Enable
S53	V.54 Address	0	0(Disable) or 1–34
S54	V.54 Device Type	0	0=Peripheral; 1=Intermediate
S55	Access from Remote	0	0=Enable; 1=Disable
S56	Remote Access Password 1st and 2nd digits	00	00–99
S57	Remote Access Password 3rd and 4th digits	00	00–99
S58	Remote Access Password 5th and 6th digits	00	00–99
S59	Remote Access Password 7th and 8th digits	00	00–99
S61	CT111 Rate Control	0	0=Ignore; 1=Fallback 1; 2=Fallback 2
S62	V.25bis Coding	0	0=ASCII; 1=EBCDIC
S63	V.25bis Idle Character	0	0=Mark; 1=Flag
S64	V.25bis New Line Character	0	0=CR+LF; 1=CR; 2=LF
S66	NMS Call Messages	0	0=Call Connect & Progress; 1=Disable; 2=Call Connect Only; 3=Call Progress Only
S67	Directory Location 1 Callback	0	0=Disable; 1=Enable
S69	Make Busy Via DTR	0	0=Disable; 1=Enable
S74	Network Position	0	0=Tributary; 1=Control
S75	Network Management Address	255	0–255 (001–256)
S76	Dial Autorate	0	0=Enable; 1=Disable; 2=Start at 4800; 3=Start at 9600

S-REGISTERS *(continued)*

Register	Description	Factory Setting	Range
S77	DTR Alarm Reporting	0	0=Disable; 1=Enable
S78	Dial Automode	0	0=Enable; 1=Disable; 2=System85
S80	No Data Disc Trigger Signal	3	0=RX or TX; 1=TX; 2=RX; 3=TX and RX
S82	Leased Autorate	0	0=Enable; 1=Disable
S83	MI/MIC Dialing	0	0=Disable; 1=Enable
S84	AT Command Mode	0	0=Normal; 1=No Error; 2=No Strap or ERROR
S85	Fast Disconnect	0	0=Disable; 1=Enable
S88	Straps When Disconnected	0	0=No Change; 1=Reload; 2=Reload, No Change
S89	V.42 ARQ Window Size Increase	0	0(6 frames) – 9(15 frames)
S90	DTE Rate = VF Rate	0	0=Disable; 1=Enable
S91	Cellular Enhancement (if ETC installed)	0	0=Disable; 1=Enable
S92	V.29 Train On Data (if V.29 installed)	0	0=Disable; 1=Enable
S93	RJ11 Cellular Adapt (if ETC installed)	0	0=Disable; 1=Enable

Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
3. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
4. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.
5. General purpose cables are used with this product for connection to the network. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer.
6. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
7. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnected**, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.
8. Input power to this product must be provided by one of the following: (1) a UL Listed/CSA certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America, or (2) a certified transformer, with a Safety Extra Low Voltage (SELV) output having a maximum of 240 VA available, for use in the country of installation.
9. In addition, since the equipment is to be used with telecommunications circuits, take the following precautions:
   - — Never install telephone wiring during a lightning storm.
   - — Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
   - — Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
   - — Use caution when installing or modifying telephone lines.
   - — Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
   - — Do not use the telephone to report a gas leak in the vicinity of the leak.

Notices

WARNING:

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.THE AUTHORITY TO OPERATE THIS EQUIPMENT IS CONDITIONED BY THE REQUIREMENTS THAT NO MODIFICATIONS WILL BE MADE TO THE EQUIPMENT UNLESS THE CHANGES OR MODIFICATIONS ARE EXPRESSLY APPROVED BY PARADYNE.

WARNING:

TO USERS OF DIGITAL APPARATUS IN CANADA:THIS CLASS A DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A RESPECTE TOUTES LES EXIGENCES DU RÈGLEMENT SUR LE MATÉRIEL BROUILLEUR DU CANADA.

Government Requirements

Certain governments require that instructions pertaining to connection to the telephone network be included in the installation and operation manual. Specific instructions are listed in the following sections.

Note that 3810*Plus* and 3811*Plus* are the model names for the model numbers 3980 and 3981, respectively. The modems collectively are called 3800*Plus* modems.

United States – Notice to Users of the Telephone Network

1. This equipment complies with Part 68 of the FCC rules. On the equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. The label is located on the bottom of the Model 3810*Plus* modem and on the circuit card assembly of the Model 3811*Plus*. If requested, this information must be provided to the telephone company.
2. For the standalone modems, the Universal Service Order Code (USOC) for Permissive mode is RJ11C; the Canadian equivalent is CA11. For the carrier-mounted modem, the USOC for Permissive mode is RJ21X (Canadian CA21A).

3. The Ringer Equivalence (REN) is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum RENs for the calling area.

4. If the 3800*Plus* modem causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

5. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

6. If you experience trouble with this equipment, please contact your sales or service representative (as appropriate) for repair or warranty information. If the product needs to be returned to the company service center for repair, contact them directly for return instructions using one of the following methods:

   — **Via the Internet:** Visit the Paradyne World Wide Web site at http://www.paradyne.com

   — **Via Telephone:** Call our automated call system to receive current information via fax or to speak with a company representative.

      — Within the U.S.A., call 1-800-870-2221

      — Outside the U.S.A., call 1-727-530-2340

   If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

7. The user is not authorized to repair or modify the equipment.

8. This equipment cannot be used on public coin service provided by the telephone company. Connection to Party Line Service is subject to state tariffs. (Contact the state public utility commission, public service commission or corporation commission for information.)

9. The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such a message clearly contains, in a margin at the top or bottom of each transmitted page, or on the first page of the transmission, the date and time it is sent, and an identification of the business, or other entity, or other individual sending the message, and the telephone number of such business, or other entity, or individual.

   In order to program this information, follow the steps outlined in the manual supplied with your fax software.

10. An FCC compliant telephone cord with modular plugs may be provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant.

Canada — Notice to Users of the Telephone Network

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone line and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION:

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Load Number for this equipment is on the label on the modem. The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all devices does not exceed 100.

If your equipment is in need of repair, refer to the procedure in the *Government Requirements and Equipment Return* section.

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